

A process for generating multipotent cells from glial cells using in vitro techniques to dedifferentiate fetal or adult mammalian glial cells into multipotent cells. The multipotent cells may further be differentiated into particular types of nervous system cells, including neurons, astrocytes, and oligodendrocytes. A small sample of astrocytes is used to establish an in vitro culture of cells that is expanded and processed to yield multipotent cells that may be used directly or be differentiated to yield neurons and/or oligodendrocytes and/or astrocytes. The invention includes implanting the generated cells into patients. The invention includes a step of exposing the cells to a growth factor.